

Electrical installations in ships —

**Part 503: Special features — AC supply
systems with voltages in the range of
above 1 kV up to and including 15 kV**

ICS 47.020.60

National foreword

This British Standard is the UK implementation of IEC 60092-503:2007. It supersedes BS IEC 60092-503:1975 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee JPEL/18, Electrical installations of ships and of mobile and fixed offshore units.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 28 September 2007

© BSI 2007

ISBN 978 0 580 58902 7

Amendments issued since publication

Amd. No.	Date	Comments

INTERNATIONAL STANDARD

IEC 60092-503

Second edition
2007-06

Electrical installations in ships –

Part 503:

Special features –

AC supply systems with voltages in the range
of above 1 kV up to and including 15 kV



Reference number
IEC 60092-503:2007(E)

CONTENTS

INTRODUCTION.....	4
1 Scope.....	5
2 Normative references	5
3 Terms and definitions	6
3.1 AC voltages.....	6
3.2 Earthed neutral systems.....	7
3.3 Insulation	7
4 General requirements.....	7
4.1 Voltage and frequency.....	7
4.2 Warning notices	8
4.3 Access	8
4.4 Insulation level	8
4.5 Clearances and creepage distances	8
4.5.1 Clearance distance.....	8
4.5.2 Creepage distance	8
4.6 Earthing	9
4.7 Distribution systems.....	10
4.7.1 Divided system	10
4.7.2 Auxiliary circuits	10
4.7.3 Busbars of main switchboards	10
4.7.4 Generator circuits	11
4.7.5 Outgoing circuits	11
4.7.6 Power-transformer circuits.....	11
4.7.7 Shore-connection circuits and circuits to other units	11
4.7.8 Control and instrumentation circuits.....	11
4.8 Generator and transformer neutrals.....	11
4.8.1 Generator neutrals interconnected.....	11
4.8.2 Disconnection.....	12
4.9 Electrical protection.....	12
4.9.1 General	12
4.9.2 Generator protection.....	12
4.9.3 Motor protection	12
4.9.4 Power-transformer protection	12
4.9.5 Voltage-transformer protection	12
4.9.6 Overvoltage protection	12
4.9.7 Earth-fault monitoring	12
5 Equipment.....	13
5.1 AC generators and motors.....	13
5.1.1 Enclosures	13
5.1.2 Performance.....	13
5.1.3 De-excitation	14
5.1.4 Mechanical characteristics.....	14
5.2 Transformers.....	14
5.2.1 Enclosures and installations	14

5.2.2	Accumulation of moisture and condensation	14
5.2.3	Transient voltage conditions	15
5.2.4	Current inrush	15
5.3	Switchgear and controlgear assemblies (switchboards)	15
5.3.1	Design and construction	15
5.3.2	Passageways	16
5.4	Switchgear and controlgear and fuses	16
5.5	Cables.....	16
5.5.1	General	16
5.5.2	Installation.....	16
5.5.3	Conductors and terminations	16
5.5.4	Current rating	17
5.5.5	Testing	17
5.5.6	Socket-outlets	17
Table 1 – AC three-phase systems having a nominal voltage above 1 kV and up to and including 15 kV		7
Table 2 – Minimum clearance for equipment.....		8
Table 3 – Minimum creepage distances for main switchboards and generators.....		9
Table 4 – Minimum creepage distances for other equipment.....		9

INTRODUCTION

IEC 60092 forms a series of International Standards for electrical installations in sea-going ships, incorporating good practice and coordinating, as far as possible, existing rules.

These standards form a code of practical interpretation and amplification of the requirements of the International Convention for the Safety of Life at Sea, a guide for future regulations which may be prepared, and a statement of practice for use by shipowners, shipbuilders and appropriate organizations.